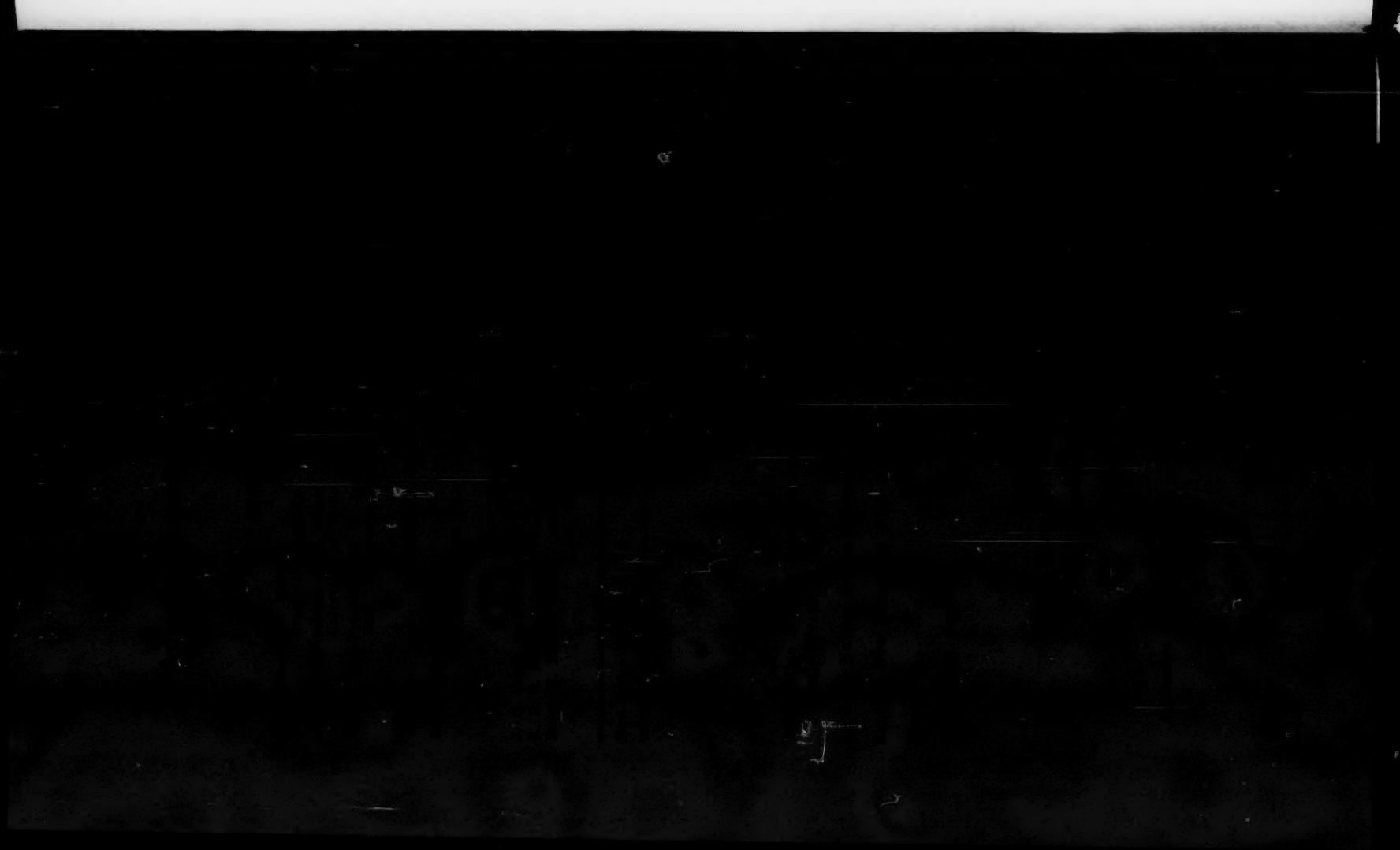

JEAN C. CAHOON
1888-1930

COMPARATIVE HOLDING POWER OF JUNIOR COLLEGES AND REGULAR FOUR-YEAR COLLEGES

WYATT W. HALE, *Registrar, Birmingham-Southern College*

To what extent are colleges succeeding in holding for their second year of college work those students who are attracted to them as Freshmen? Is there any significant difference between the holding power of junior colleges and regular four-year colleges? Is the publicly supported institution more or less successful in this respect than its privately endowed or denominationally supported neighbor?

In an effort to answer these and some other related questions, the following comparative study of the holding power of junior colleges and regular four-year colleges has been carried out. An examination of the catalogs of between two and three hundred junior colleges yielded only thirty-eight of these institutions in which the holding power could be studied, and in only four of these instances was it possible to make a study of the percentage of more than one first-year class which continued the following year either as members of the first-year class or as members of the second-year class. There are several factors which have contributed to this necessary limiting of the study. Among them may be mentioned the following:

(1) In some instances catalogs of the institution for two consecutive years were not available.

(2) In the case of only four institutions were catalogs containing the necessary information available for more than two consecutive years.

(3) A number of the junior colleges do not include a roster of their students in the catalog.

(4) Many of those junior colleges which do list their students in the catalog simply include one alphabetical list-

ing of the students and do not indicate the classification of each student.

The group of standard colleges used for purposes of comparison consists of twenty-one institutions. The first fourteen of these twenty-one were the first fourteen standard colleges alphabetically for which catalogs containing the necessary information were available in the Main Library of Leland Standford Junior University. Of the remaining seven, two (Mount Holyoke and Vassar) are admittedly not "typical," i. e., they are not what might be expected in a random sampling. This fact is recognized by presenting the statistical analyses both with and without these two institutions. They are interesting because of their extremely large holding power, however, and are presented mainly because of their interest as exceptions. That the other five standard colleges which make up the list of those institutions studied are not "exceptional" institutions is indicated by the fact that the average holding power of these five varies from the average holding power of the entire group (exclusive of Mount Holyoke and Vassar) by less than one-tenth of one per cent. Assuming a random sampling, information is presented later (P. E. of the averages) which indicate that the facts presented and conclusions drawn from them are fairly valid, and that differences noted are reliable.

Although the number of institutions is somewhat smaller than might be desired (a little less than 10% of the total number of junior colleges listed by the latest directory of the American Association of Junior Colleges), the following distribution of the institutions studied points to the fact that the ones studied are fairly representative, and constitute a fairly good random sampling. The junior colleges are distributed among twenty-two different states of the Union as follows: Arkansas, 1; California, 1; Idaho, 1; Illinois, 2; Iowa, 1; Kansas, 2; Kentucky, 1; Louisiana, 1; Maine, 1; Maryland, 1; Minnesota, 1; Mississippi, 1; Missouri, 7; New Mexico, 1; New York, 2; North Car-

olina, 2; North Dakota, 1; Pennsylvania, 1; Tennessee, 3; Texas, 3; Utah, 3; and West Virginia, 1. The standard colleges are distributed among fourteen different states as follows: Alabama, 1; California, 2; Georgia, 1; Illinois, 1; Kansas, 1; Maine, 1; Massachusetts, 2; Michigan, 2; Mississippi, 1; New York, 3; Ohio, 3; Pennsylvania, 1; Virginia, 1; and Washington, 1.

In spite of the great development of the junior-college movement in California, it was possible to study the holding power of only one California junior college, due mainly to the third and fourth of the above mentioned factors. Fortunately, however, the one California junior college for which information is available is of the better type of district junior colleges, and one which is generally considered to be fairly representative of the California district type of junior college—Santa Ana. The number of junior colleges from Missouri included in this study is rather large, but it may not be considered an unduly large percentage when it is realized that the 1929 directory of the American Association of Junior Colleges lists twenty-three junior colleges in Missouri.

The distribution of the junior colleges as to control is as follows: public institutions, 11; denominational, 21; and privately endowed or proprietary, 6. The distribution of the standard colleges as to control is as follows: public institutions, 1; denominational, 10; privately endowed or proprietary, 10. The number and percentage of standard colleges of the public type studied is somewhat small, but (excluding the universities, of which no study was attempted in this paper) the total number of standard colleges of this type in the United States is quite small as compared with the number of denominational and privately endowed colleges. The distribution of junior colleges as to types of students admitted is: coeducational, 24; for men only, 3; for women only, 11. The distribution of standard colleges as to types of students admitted is: coeducational, 14; for men only, 3; for women only, 4.

As will be pointed out later, the relative age of the junior colleges may be thought to exert some influence on their holding power. It may be interesting, therefore, to inquire into the age of the junior colleges and of the standard colleges studied. The oldest of the junior colleges studied was founded in 1802, and the most recently established one began offering work in 1927. The median date of founding of the junior colleges studied falls between 1898 and 1899. The spread of the standard colleges studied is not merely so great, since the oldest one studied was organized in 1815, and the youngest of them has been operating since 1901. The median standard college was founded in 1865. When this great difference in the age of the junior colleges and standard colleges studied was brought out, an attempt was made, by consulting The College Blue Book (edited by Hurt) to locate standard colleges founded since 1901 which might be studied. A list of eleven such institutions was prepared, but catalogs containing the necessary information were not available for any of these colleges.

Method of Study

The method employed in determining the holding power of the various institutions was to check the first-year students listed in the catalog for one year against the students listed in the catalog of the succeeding year. That it is not sufficient to simply check as to whether a person listed as a first-year student one year returns the following year in the next higher classification is demonstrated by the fact that in one of the junior colleges studied (Bethel College, Kentucky, for 1927-28) the percentage of first-year students who returned the following year was equally divided, 26.3% of those who returned being listed the following year as first-year students and 26.3% of them being listed as second-year students, so that an entirely erroneous conclusion as to the holding power would be drawn if one should consider only those whose classification is advanced one year when they return. Of course this large a per-

centage of students returning but failing to advance their classification is unusual, but consultation of the tabular material which is presented later will indicate clearly that this is a factor which should not be overlooked.

The percentage of students in standard colleges returning the following year but failing to advance their classification is not as great in any one institution as in the junior college mentioned above (Birmingham-Southern College lists the largest percentage for standard colleges—17.5% for one year), but the average for the standard college is larger, being 6.6% as compared with an average of 5.5% for the junior colleges. Because of the size of this item, we might, on first thought, feel that the colleges, both junior and standard, are having a large number of students to return for the second year's work who have not done satisfactory work during their first year. While I am not familiar with the causes for this situation generally, I do know that such conclusions for Birmingham-Southern College would not be wholly warranted. Birmingham-Southern College is located in a city with a fairly large public school system, and a large number of students graduate from the local high schools at the end of the first semester. Special arrangements are made to care for these high school graduates in separate classes during the second semester of the college year, and as a result, there is an annual enrollment of something like 100 freshmen at the beginning of the second semester. While some of these mid-year freshmen take a sufficiently large amount of work during the summer session to advance their classification to that of sophomores for the fall semester, there is a large group which does not take advantage of the summer session to advance their classification. They return in the fall as freshmen. It is clear that these should not be considered along with those who enrolled as freshmen at the beginning of the first semester and then—because of failures—return as freshmen the following fall. Another factor which contributed to the retardation in classification of students in their sec-

ond year is their transfer from one type of course (e. g., Business and Industry) to another (e. g., Engineering), with the result that some of the work carried during the first year is not acceptable in the new course they undertake.

Still another group which must be considered in the case of the standard colleges consists of those students who are listed one ear as freshmen and who return the following year as juniors, probably because of the fact that when they were listed as freshmen they had completed almost enough work to be classified as sophomores, and by taking more than the usual amount of work during the regular fall and spring semesters and taking additional work in the summer session, have secured sufficient credits to classify them as juniors. This group (as will be noted from the tables) is not large, but amounts to as much as 2.9% of those returning in the case of one school (Bridgewater College).

Findings and Interpretations

With these statements as to limitations and methods of study, we are now ready to examine the findings as to the comparative holding power of junior colleges and standard colleges and to attempt some interpretations of the results shown. The limitations mentioned should be kept clearly in mind.

From the accompanying tables, it will be noted that the holding power of the junior colleges varies from 30.8% in one to 84.2% in another institution, with a median of 24.8% and an average of 54.3% (sigma $= \pm$ 14.98 and P. E. of average $= \pm$ 1.56); while the holding power of the standard colleges (excluding Mount Holyoke and Vassar) has a range of from 50.7% to 80.6%, with a median of 65.8% and an average of 66.0% (sigma $= \pm$ 8.96 and P. E. of average $= \pm$ 1.26). When Mount Holyoke and Vassar are included, the range of holding power for the standard colleges is from 50.7% to 92.9%, with a median of 67.9% and

an average of 70.1% (sigma $= \pm$ 11.64 and P. E. of average $= \pm$ 151).

Employing the criterion that if the result obtained by dividing the difference between the two means by the probable error of this difference amounts to 4, the chances are 99.7 in 100 that the true difference between the averages is greater than zero, we arrive at the conclusion that the difference in holding power in favor of the standard colleges over the junior colleges is a real difference, and not caused by chance factors. If Mount Holyoke and Vassar are included, the result (difference between the averages divided by the probable error of the difference) is 7.28, while even with the elimination of these two institutions, the result is 5.85, so that we may feel fairly safe in saying that the standard colleges do have a greater holding power than the junior colleges.

A study of the holding power of the separate types (coeducational, for women only, and for men only) of junior colleges and standard colleges, while perhaps not entirely significant because of the small number of colleges for men only, is rather interesting. The data of the study show that in the junior colleges ten of the coeducational institutions were above average in holding power and seventeen were below average; nine for women only were above average and two were below average; three for men only were above average and one was below average. Where figures for an institution cover the study of more than one class or school year, each class is treated as a separate unit in this table. The totals thus exceed the number of institutions studied.

The data of the study show that in the standard colleges, excluding Mt. Holyoke and Vassar, eight of the coeducational institutions were above average in holding power and nine were below average; one for women only was above average and one was below average; two for men only were above average and two were below average. If Mt. Holyoke and Vassar are included four coeducational institutions were above average and thirteen were below aver-

Holding Power of 38 Junior Colleges

TABLE I

Name of Institution	First year class studied	No. enrolled in 1st year class	Continued in the institution the following year as				Total continuing the following year	
			Second-year students		First-year students			
			No.	%	No.	%	No.	%
Alliance	1927-28	13	5	38.4	0	0.0	5	38.4
Bethel, Ky.	1925-26	29	12	41.4	5	17.2	17	58.6
	1927-28	57	15	26.3	15	26.3	30	52.6
Bluefield	1927-28	81	29	35.8	8	9.9	37	45.7
Blue Ridge	1927-28	26	8	30.8	0	0.0	8	30.8
Branch Agricultural College of Utah	1927-28	39	18	46.1	1	2.6	19	48.7
Central	1926-27	71	39	54.9	1	1.4	40	56.3
The A. M. Chesbrough Seminary	1925-26	18	13	72.2	0	0.0	13	72.2
Christian	1927-28	148	83	56.1	1	.7	84	56.8
Dixie	1927-28	47	21	44.7	3	6.4	24	51.1
Hardin	1927-28	43	24	55.8	0	0.0	24	55.8
Hesston College and Bible School	1927-28	27	14	51.9	4	14.8	18	66.7
Hiwassee	1927-28	90	29	32.2	10	11.1	39	43.3
Southern Branch of Univ. of Idaho	1927-28	259	135	52.1	12	4.6	147	56.7
Jacksonville	1927-28	35	13	37.1	1	2.9	14	40.0
LaSalle-Peru-Oglesby	1927-28	53	23	43.4	2	3.8	25	47.2
Louisburg	1927-28	117	51	43.6	6	5.1	57	48.7
Mansfield Female	1927-28	35	24	68.6	1	2.8	25	71.4
Monticello Seminary	1926-27	40	32	80.0	0	0.0	32	80.0*
Nasson Institute	1927-28	42	24	57.1	10	23.8	34	80.9
New Mexico Military Institute	1927-28	130	66	50.8	5	3.8	71	54.6
North Dakota School of Forestry	1927-28	23	11	47.8	1	4.4	12	52.2
North Texas Agricultural College	1927-28	156	59	37.8	18	11.5	77	49.3
Packer Collegiate Institute	1925-26	93	60	64.5	3	3.2	63	67.7
Palmer	1927-28	74	32	43.2	7	9.5	39	52.7
Paris	1927-28	146	66	45.2	8	5.5	74	50.7
St. John's Lutheran.	1927-28	29	20	68.9	0	0.0	20	68.9
St. Paul's	1927-28	16	11	68.8	0	0.0	11	68.8
	1928-29	19	16	84.2	0	0.0	16	84.2
Santa Anna	1927-28	243	110	45.2	24	9.9	134	55.1
Sheldon	1927-28	27	10	37.0	0	0.0	10	37.0
Southwest Baptist	1927-28	99	38	38.4	1	1.0	39	39.4
Stephens	1927-28	329	192	58.3	2	.6	194	58.9
Jr. College of Agri., etc., Univ. of Tenn.	1927-28	84	27	32.1	3	3.6	30	35.7
Trevecca	1928-29	31	13	41.9	6	19.4	19	61.3
Virginia	1926-27	49	27	55.1	3	6.1	30	61.2
	1927-28	84	49	58.3	3	3.6	52	61.9
Weaver	1927-28	75	27	36.0	6	8.0	33	44.0
	1926-27	51	24	47.1	5	9.8	29	56.9
Westminster	1927-28	40	17	42.5	4	10.0	21	52.5
Whitworth	1927-28	72	47	65.3	1	1.4	48	66.7
William Woods	1928-29	163	76	46.6	4	2.5	80	49.1

* In Monticello Seminary, "the first-year junior-college students are organized as Middle Seniors at the end of the first semester. Only those students are admitted to this classification who can meet the academic requirements and in addition have shown themselves in harmony with the ideals of Monticello, and so have qualified worthily to represent the traditions of the school." There are only two groups of junior-college students listed—Middle-Seniors and Seniors. It is necessary, therefore, to consider the Middle-Seniors as first-year students, but the holding power of the institution is raised by the fact that any students who have not been able to meet the academic and other requirements set down by the end of the first semester are not listed as first-year students. It is only natural to expect a larger percentage of this selected group to return than would be indicated in an institution which lists as first-year students all who enroll, regardless of what their accomplishments may be during the first semester.

Holding Power of 38 Junior Colleges (Concluded)

TABLE II

Statistical Data	No. enrolled in 1st-year class	Continued in the institution the following year as				Total continuing the following year	
		Second-year students		First-year students			
		No.	%	No.	%	No.	%
Totals	3303	1610	....	184	....	1794	....
Range	13 to 329	5 to 192	26.3 to 84.2	0 to 24	0.0 to 26.3	5 to 194	30.8 to 84.2
Average	76.3	38.9	48.8	4.4	5.5	42.7	54.3
Sigma	....	....	13.4	....	6.5	....	14.98
P. E. (Ave.)	....	....	1.39	....	.67	....	1.56
Median	52.0	26.0	46.4	3.0	3.8	30.0	54.8
Upper quartile	96.0	50.0	57.8	6.0	9.9	54.0	64.3
Lower quartile	30.0	14.5	38.4	1.0	.8	18.5	47.9

Holding Power of 21 Standard Colleges

TABLE III

Name of Institution	First year class studied	No. enrolled in 1st-year class	Continued in the institution the following year as						Total continuing the following year	
			Second-year students		First-year students		Third-year students			
			No.	%	No.	%	No.	%	No.	%
Adelphi	1926-27	181	142	78.4	1	.6	0	0.0	143	79.0
Agnes Scott	1923-24	220	119	54.1	20	9.1	6	2.7	145	65.9
Albion	1926-27	291	175	60.1	15	5.2	1	.3	191	65.6
Alfred	1927-28	163	105	64.4	5	3.1	0	0.0	110	67.5
Allegheny	1926-27	201	135	67.1	16	8.0	1	.5	152	75.6
Alma	1926-27	132	69	52.3	7	5.3	1	.7	77	58.3
Amherst	1927-28	232	179	77.1	5	2.2	0	0.0	184	79.3
Antioch	1926-27	203	133	65.5	4	2.0	3	1.4	140	68.9
Aurora	1925-26	36	20	55.5	1	2.8	0	0.0	21	58.3
Bates	1926-27	196	142	72.5	14	7.1	2	1.0	158	80.6
Baldwin-Wallace	1926-27	143	94	65.8	2	1.4	1	.7	97	67.9
Bethany	1926-27	149	75	50.3	18	12.1	4	2.7	97	65.1
Birmingham-Southern	1922-23	239	123	51.5	21	8.7	5	2.1	149	62.3
	1925-26	457	185	40.5	80	17.5	8	1.7	273	59.7
	1926-27	491	167	34.0	75	15.3	7	1.4	249	50.7
Bridgewater	1926-27	69	46	66.6	1	1.5	2	2.9	49	71.0
California Institute of Technology	1926-27	146	105	71.9	2	1.4	0	0.0	107	73.3
Mississippi A. and M.	1922-23	406	207	51.0	50	12.3	4	1.0	261	64.3
	1926-27	536	264	49.3	57	10.6	9	1.7	330	61.6
Mt. Holyoke	1922-23	224	204	91.1	3	1.4	1	.4	208	92.9
	1926-27	222	201	90.5	4	1.8	1	.5	206	92.8
Oberlin	1922-23	364	243	66.7	8	2.2	1	.3	252	69.2
	1926-27	370	272	73.5	2	.5	2	.5	276	74.5
Vassar	1922-23	326	279	85.6	9	2.8	1	.3	289	88.7
	1926-27	340	307	90.3	2	.6	0	0.0	309	90.9
Whitman	1923-24	191	108	56.6	12	6.3	0	0.0	120	62.9
Whittier	1926-27	160	80	50.0	5	3.1	3	1.9	88	55.0

Holding Power of 21 Standard Colleges (Concluded)

TABLE IV

Statistical Data	No. enrolled in 1st-year class	Continued in the institution the following year as						Total continuing the following year	
		Second-year students		First-year students		Third-year students			
		No.	%	No.	%	No.	%	No.	%
Totals (including Mt. Holyoke & Vassar)	6688	4189	.....	439	.....	63	.....	4691	.....
Range	36 to 536	20 to 307	34.0 to 91.1	1 to 80	.5 to 17.5	0 to 9	0.0 to 2.9	21 to 330	50.7 to 92.9
Average	247.7	154.8	62.6	16.3	6.6	2.3	.9	173.8	70.1
Sigma	.....	.....	14.95	.....	4.88	.....	.91	.....	11.64
P. E. (average)	.....	.....	1.94	.....	.63	.....	.12	.....	1.51
Median	211.5	142.0	65.5	7.0	3.1	1.0	.5	152.0	67.9
Upper quartile	346.0	205.0	74.4	18.5	8.8	4.0	1.7	254.0	79.2
Lower quartile	157.2	92.0	51.5	3.0	1.5	0.0	0.0	104.0	66.8
Totals excluding Mt. Holyoke & Vassar)	5576	3198	.....	421	.....	60	.....	3681	.....
Range	36 to 536	20 to 272	34.0 to 78.4	1 to 80	.5 to 17.5	0 to 9	0.0 to 2.9	21 to 330	50.7 to 80.6
Average	242.4	139.0	57.4	18.3	7.6	2.7	1.1	160.0	66.0
Sigma	.....	.....	11.72	.....	4.85	.....	.94	.....	8.96
P. E. (average)	.....	.....	1.65	.....	.68	.....	.13	.....	1.26
Median	198.5	123.0	58.3	7.5	4.2	1.5	.7	144.0	65.8
Upper quartile	365.5	180.5	68.3	20.2	9.5	4.2	1.8	249.8	73.6
Lower quartile	148.2	91.5	50.8	2.0	1.9	0.0	0.0	97.0	61.1

age; five for women only were above average and one was below average; two for men only were above average and two were below average. The totals exceed the number of institutions studied as noted in the paragraph above.

Somewhat the same limitations as those pointed out above in the separation of institutions studied as to type of students admitted apply also in a study of the comparative holding power of the institutions when separated as to type of control; public or private. The figures are presented, however, for what they may be worth. Of the junior colleges, five under public control are above average in holding power and seven are below average; fifteen under denominational control are above average and eleven are below average; two privately endowed or proprietary institutions are above average and two are below average. Of the standard colleges, including Mt. Holyoke and Vassar, none of the institutions under public control are

above average in holding power and two are below average; two under denominational control are above average and ten are below average; nine privately endowed or proprietary institutions are above average and four are below average. The comparison is not essentially different when Mt. Holyoke and Vassar are excluded from the list.

As was suggested above, the age factor may not be an altogether unimportant one in the holding power of the junior colleges. Since the most recently established standard college studied was founded in 1901, this date was chosen as the dividing point for the study of institutions of varying ages. In the junior colleges founded prior to 1901, the holding power was above the average in sixteen instances and below the average in ten instances. Of the junior colleges established since 1901, the same number of institutions, ten, is found below the average and in only six instances is the holding power above the holding power of the entire group of junior colleges. It is interesting to note, however, that in one institution, Packer Collegiate Institute, founded in 1853, which indicates by varying designations those students whose mothers graduated from the institution, those whose grandmothers graduated, and those whose great-grandmothers were graduated, of the first-year students listed (five) whose mothers were graduated from the institution, two did not return the following year. None were listed in the first-year class whose grandmothers or great-grandmothers had graduated.

Summary

This study seems to indicate the following conclusions:

1. Standard colleges have a significantly greater holding power than do junior colleges.

2. The difference in holding power (reliability measured by the P. E. [diff.] of averages) is a real one, and could not be accounted for on the basis of mere chance factors operating in the choice of institutions studied.

3. Of the junior colleges studied, there is a larger num-

ber of instances where the holding power is below average than above for coeducational institutions; in the institutions for men only or for women only, the opposite prevails.

4. Of the standard colleges, excluding Mt. Holyoke and Vassar, there is practically an even division of institutions above and below the average in holding power for each type of institution. When Mt. Holyoke and Vassar are included, however, the results are more nearly the same as in the junior colleges.

5. Of the junior colleges, the privately endowed or proprietary ones are evenly divided below and above the group average in holding power, while in denominational institutions more are above average than below. In the public junior colleges, a larger number is below than above the group average in holding power.

6. In the standard colleges, a large number of the privately endowed or proprietary institutions is above average in holding power than is below average. The holding power of the public and denominational institutions is below rather than above average.

AN INDEX NUMBER FOR THE COMPARISON OF SECONDARY SCHOOLS

WM. S. HOFFMAN, *Registrar, The Pennsylvania State College*

For more than a decade The Pennsylvania State College has been requesting the principals of secondary schools to indicate the relative rank, in their graduating classes, of all applicants for admission to the college. During this period, this relative rank has been a very large factor in the selection of freshmen. Each year the number of applicants has been more than one hundred per cent in excess of the quota that could be accommodated by the class-room and laboratory facilities of the college, and each year the preference has been given to those ranking relatively higher.

The percentage of students admitted has, each year, increased for those graduated in the upper divisions, and, at the same time, there has been the corresponding decrease in the percentage from the lower divisions. That the college was justified in making its selections very largely on this basis is indicated in a paper appearing in THE BULLETIN for April, 1926, entitled "A Comparison of College Failures with High School Rankings." This paper is not to deal with the justification of the selective process now used at The Pennsylvania State College, but hopes to point out a method by which the college record of the product of a single secondary school might be reduced to a number which would convey to the admission officer, at a glance, a picture of the school, and an indication of what a student from that school might be expected to do in college. This index number for a typical school is 352X4, and indicates that the product of the school has been rather uniformly successful in college. How this figure may be obtained for any one school is explained in the following paragraphs.

The Pennsylvania State College is a member of the Association of Colleges and Secondary Schools of the Middle

Atlantic States and Maryland. The writer is a member of the Pennsylvania Committee of the Association Commission on Secondary Schools and is, therefore, interested in the accumulation and use of data in connection with the records made in secondary schools and in institutions of higher education. The following form is used in reporting the records of Freshmen to the Secretary of the Commission:

Mr.
Miss H. S.

Last Name Initials Name of Secondary School

Graduated by secondary school.....in.....fifth of class

Record of Academic year 1930-'31 at

THE PENNSYLVANIA STATE COLLEGE

First Semester		Second Semester		Enrolled in school of
Subject	Grade	Subject	Grade	.....
				At the end of the year
				this student ranked in
				the
				tenth of the class.
				W. S. HOFFMAN
				Registrar

First semester average..... Year average.....

A carbon copy of each record, on light-weight bristol-board, is filed in an index made up of the names of Pennsylvania Secondary Schools. Each year, over a four-year period, a different colored bristol is used, and each year as the new records are filed, the cards filed four years previously are removed. There may thus be found filed behind the name of each secondary school, the freshmen records over a four-year period, for all those admitted from the

school. The records made by the students from two or more secondary schools may be compared, but the comparison of the data on a number of cards, even when tabulated, is difficult, and the comparison of hundreds of schools, unless further work is done with the data, would be almost an impossibility.

The writer is thoroughly convinced that any comparison of students from different secondary schools is absolutely valueless if the relative rank of the students in their secondary school graduating classes is not considered. To this end, the students are divided into the five groups representing the quintile ranking in secondary school graduating classes, and the average rank in the freshman class computed for each quintile. As shown on the form printed above, rank in the freshman class is indicated in tenths.

The records for secondary schools appear in tabular form as follows:

Name of School	First Quintile			Second Quintile			Third Quintile			Fourth Quintile			Fifth Quintile		
	N	S	Av.	N	S	Av.	N	S	Av.	N	S	Av.	N	S	Av.
High School in Allegheny County	2	6	3.00	6	18	3.00	8	55	6.87	4	33	8.25	1	9	9.00
High School in Blair County	13	37	2.84	13	82	6.30	18	131	7.27	3	28	9.33	...	...	....
High School in Philadelphia County	9	33	3.55	5	21	4.20	9	67	7.44	4	24	6.00	5	44	8.80

N = Number of students; S = Sum of ranks (in tenths).

The writer is well aware of the danger in comparing averages, but submits that the above figures do indicate a considerable difference in rank, especially when it is remembered that one-tenth of the freshman class at The Pennsylvania State College numbers over one hundred and twenty persons. For example, the average rank for a freshman graduated in the upper fifth of his class by the high school in Blair County is ninety-seven places higher than the rank of the freshman similarly graduated by the high school located in Philadelphia. The average freshman from the Philadelphia school, however, if graduated in the second-fifth of his class, leads his college classmate from

the high school in Blair County, and who also was graduated in the second-fifth of his class, by over two hundred and fifty places. The writer will not attempt to explain the why of this variation but simply points it out as a fact.

A card containing the data for each secondary school was then prepared and the cards were arranged on the basis of the average rank in the freshman class of those who had been graduated by the secondary school in the first quintile. During the period covered by the study, applicants graduated in the upper quintile were admitted from 318 Public High Schools, in addition to those admitted from Public Vocational Schools, and the various types of Private Secondary Schools.

These 318 high schools were then grouped in ten divisions, as nearly equal as possible, but placing all in the same division whose average rankings were equal. The tabulation is as follows:

Average rank of Public High Schools according to average rank in Freshman Class of those graduated in the upper quintile.

Group	*N = 318* *n*	*Range of Average Ranks (in tenths)*
1	35	1.00
2	48	1.50– 2.00
3	14	2.25– 2.50
4	52	2.66– 3.00
5	17	3.25– 3.55
6	25	3.66– 4.25
7	42	4.33– 5.00
8	26	5.50– 6.00
9	33	6.33– 8.00
10	26	9.00–10.00

N = total number of secondary schools, n = number in any one group.

Between 36 and 40 per cent of the freshmen admitted during the period covered in this study had been graduated in the upper quintile. If all such freshmen made a perfect "A" record and if all those who had been graduated lower made an average of "B," those from the first quintile of

the secondary school graduating classes would be grouped at the head of their class but would more than fill the first quintile of the Freshman class, and would overflow into the second quintile, almost filling it. Any person, therefore, who had been graduated in the secondary school in the upper quintile and who ranks lower than the upper two quintiles in the Freshman class at The Pennsylvania State College, is not doing as well as his secondary school ranking indicated he could do.

High school principals, therefore, who find the average rank in college for those they had graduated in the first quintile falling below the first six groups of the foregoing table are in grave danger in so far as their certification privilege at The Pennsylvania State College is concerned. Groups one to six are doing good work, although, of course a higher ranking indicates a greater measure of success on the part of the Freshman coming from a given school.

Referring to the tabulation of the average ranking of the freshmen received from three Public High Schools, it may be seen that the average ranks for the freshmen admitted from the upper quintile are as follows:

High School in Allegheny County 3.00
High School in Blair County 2.84
High School in Philadelphia County 3.55

The groups to which this average would assign the high school, among the 318 high schools from whom graduates in the first quintile were accepted, are as follows:

High School in Allegheny County .....Fourth group
High School in Blair County .....Fourth group
High School in Philadelphia County .....Fifth group

This group number forms the first figure of the five-figure number referred to in opening paragraphs of this paper. The second figure is found in a similar manner, on the basis of the average rank of those who had been admitted from the second quintile. The third figure represents the third quantile, and the last two figures the fourth and fifth quintiles respectively.

Since there are ten groups the letter "X" is used to represent the tenth group for any quintile; and since most high schools do not have representatives in the freshman class for all quintiles, the figure zero (0) is used to show this fact.

Typical figures for actual high schools follow:

High School in Centre County 54590
High School in Dauphin County 13500
High School in Fayette County 74770
High School in Somerset County 4XX00
High School in Luzerne County 4X900

The appropriate number is placed, by a member of the Registrar's staff, on the certificate submitted by the applicant for admission to the freshman class and the Registrar needs look no further in order to know what the former students from the school concerned have done.

It must be remembered that these numbers are compiled from average rankings based on past performances, and that the applicant under consideration may do good work in spite of the fact that his predecessors from his high school have done poorly. The writer knows, however, that what any applicant will do in college is in the future, and that, for any one individual, regardless of the niceties of precision of any predictive measurements, it is impossible to make absolutely accurate prophecies of success or failure. It is a fact that some men do die of natural causes shortly after purchasing life insurance, but insurance companies continue to do business. Why? Because the companies do "guess" correctly in the vast majority of cases. In the same manner, Registrars are admitting, wherever selective admissions are permissible, those who will best permit the colleges to "continue to do business."

RANKING NEW HAMPSHIRE HIGH SCHOOLS*

RUSSELL H. LEAVITT, *High School Agent, State Board of Education, New Hampshire*

The New Hampshire State Board of Education in its bulletin for 1930-1931, number 148, publishes among other items a method of rating New Hampshire high schools on the basis of success or failure in college. The following is a reprint of that portion of the report dealing with this item.

INSTITUTIONS ATTENDED BY NEW HAMPSHIRE HIGH SCHOOL GRADUATES

The following list names the schools which are reported to have admitted last fall four or more of our graduates of the class of 1928 or 1929:

Bates	12	Lesley	5
Bay Path	11	Mary Hitchcock Hospital	5
Bentley School of Accounting	6	Margaret Pillsbury Hospital	12
Boston College	5	Massachusetts College of Pharmacy	4
Boston University	20	Massachusetts General Hospital	10
Bowdoin	6	McIntosh Business College	18
Brown	8	Middlebury	6
Bryant and Stratton	10	Nashua Business College	7
Colby Junior College	7	Nashua Memorial Hospital	6
Concord Business College	54	New England Conservatory of Music	5
Concord Training School	5	New Hampshire Memorial Hospital	4
Dartmouth	35	New Hampshire University	294
Duke	4	New Hampshire University Two-year Agricultural	6
Elliot Hospital, Keene	11	Northampton Commercial College	5
Fordham	6	Northeastern	18
General Electric Company	23	Norwich University	10
Harvard	9		
Hesser Business College	9		
Katharine Gibbs Secretarial School	5		
Keene Normal	157		
Lawrence General Hospital	4		

* From the New Hampshire State Board of Education Reports, Series 1930-31, Number 148.

Notre Dame	6	St. Joseph's Hospital, Long Island	5
Peter Bent Brigham Hospital	5	Simmons	9
Plymouth Normal	85	Tufts	5
Portsmouth Hospital	5	University of Pennsylvania.	6
Posse-Nissen	4	University of Vermont	7
Radcliffe	5	Wentworth Institute	12
Regis College	5	Wesleyan	4
St. Anselm's	10	Wheaton	6
St. Joseph's Hospital, Nashua	7	Worcester Polytechnic Institute	8

55 Institutions; 1,016 Students

Besides those noted above, 242 pupils were admitted to 170 other colleges, normal schools and training schools. In addition, 160 pupils continued their education in secondary schools.

Sixty and seven-tenths per cent of the 1,418 students entering any institution continued their education in New Hampshire institutions in the fall of 1929.

We secured the final rating in the column at the extreme right of the table below by multiplying the attainment in each college by the number of pupils from each school in said college, adding the product obtained, and dividing this sum by the entire number of pupils who entered post-secondary institutions. In the case of Groveton, this procedure is

$$\frac{(2 \times 20) + (2 \times 30) + (3 \times 27)}{7} = \frac{181}{7} = 26$$

This is the meaning of the "26" appearing in the column heated "Rating" opposite "Groveton High School."

The number of students admitted is given because a record of the work of a single student is of little value as an indication of the rank of the school. In most cases, however, the record is significant.

It is a matter for careful consideration of any school if no graduate enters any accredited college or normal school.

The "sixty-four other colleges and normal schools" are Amherst, Bridgewater Normal, Bucknell, Carnegie, Catholic University, Colby, Colgate, St. Elizabeth, Colorado, Colorado School of Mines, Connecticut College for Women, Columbia, Cornell, Emerson, Farmington Normal, Gordon College of Theology, Hamilton, Hollins, Holy Cross, Johns Hopkins, Kenyon, Lafayette, Lehigh, Lowell Normal, Marietta, Marygrove, Massachusetts Agricultural, Massachusetts Institute of Technology, Moravian College for Women, Mount Holyoke, New Rochelle, New York University, Northwestern, Notre Dame, Ohio State, Pennsylvania State, Providence, Purdue, Randolph-Macon, Rhode Island State, Rollins, St. Lawrence, Skidmore, Smith, State College Washington, Syracuse, Temple, U. S. Military Academy, U. S. Naval Academy, University of Chattanooga, University of Illinois,, University of Maine, University of Minnesota, University of North Carolina, University of Tennessee, University of Virginia, University of Wisconsin, Virginia Military College, Washington and Jefferson, Wellesley, Western Maryland, Western Union, Williams, William and Mary.

The scale used has for its limits 40 and 0. The norms for the several post-secondary schools follow: Plymouth, 21.8; Keene, 21.8; Others, 18.9; Dartmouth, 17.1; New Hampshire University, 14.8.

To obtain the norm in each post-secondary school, we multiply the rating under the name of each college or normal school and opposite the name of each secondary school by the number of pupils attending the designated institution from the given high school, add the product so obtained for each secondary school and divide the sum by the total number of pupils attending the designated institution for the first time from all New Hampshire secondary schools.

Any secondary school whose rank is equal to the norm is meeting average success and from this point it may approach in either direction the limits just given. The

method used in obtaining these limits is explained in the first paragraph. A school whose graduates obtained an average of 21.8 for their first semester's rank at Keene has met with average success.

[EDITOR'S NOTE:—The ranks are given, in the report, for *all* New Hampshire high schools, this reprint gives the results only for those high schools having an enrollment of 401 or more.]

School	Graduates 1929	No. of pupils admitted to colleges and normal schools	Dartmouth	Keene	Plymouth	New Hampshire University	Sixty-four other colleges	Rating
Concord	159	32	20	30	20	18	22	21
Manchester Central	310	79	18	22	22	19	21	21
Berlin	101	24	..	21	20	17	27	20
Keene	129	49	..	22	20	16	20	20
Portsmouth	149	44	15	22	23	19	19	20
Dover	73	27	..	..	18	19	15	18
Manchester West	90	20	..	26	16	16	20	18
Nashua	153	47	20	21	..	17	17	18

In the fall of 1928, 58.6% of the 1,356 students entering any institution continued their education in New Hampshire institutions.

REPORTS FROM COLLEGES AND NORMAL SCHOOLS

College Reports. Pupils enrolled in institutions requiring less than four years of strictly post-secondary work, with the exception of normal schools, are not included in this study. Only post-secondary institutions requiring a secondary certificate for admission, and granting degrees, except normal schools, are included. Within the scope of this study the headmasters reported the names of 870 admitted to post-secondary schools in the fall of 1929. Ninety colleges and normal schools reported on 858 pupils who entered from New Hampshire high schools. Of these we were able to secure the ranks of 829 who remained for the

first ranking period. This report is based upon the ranks of 829 freshmen admitted in the fall of 1929 from 83 of the 96 New Hampshire schools approved in the first class for 1928-29. These ranks were valued in five grades of which A, B, C, and D represent equal divisions of the passing rank of the scale, and E represents failure. The percentage of students in each grade multiplied by the arbitrary values assigned this scale, 40, 30, 20, 10, 0, gives the rank of the school in the columns of the following table. Finally, the general standing of the school is determined by averaging these five columns on the basis of the number of students in each division.

As an illustration, take the figures for Groveton High School. Seven of the recent graduates of Groveton High School entered some post-secondary institution. Two entered Keene and at the end of the first semester both had an average of C. The attainment of each pupil is represented by 20. To determine the standing of the Groveton pupils at Keene, these scores are added together and divided by 2, the number of pupils making the score. This attainment is 20. Two pupils entered the University of New Hampshire and each received for the first term a grade of B, or 30. The attainment at the university is represented by 30, the average of the two grades. Three pupils entered other institutions. Two received a grade of B, and one of C. Their individual attainment is then reported on the basis of 30, 30, and 20. To get the attainment for those going to other institutions, the sum of these three figures is divided by 3. This equals 27.

PERSONALS

The frontispiece for this issue is of the late Miss Jean C. Cahoon, Registrar of Smith College. Volume six, number two, contains a statement concerning her work at Smith College.

Mr. Wyatt W. Hale, Registrar of the Birmingham-Southern College, held the American Association of Collegiate Registrars' Fellowship for 1929-30 and studied during that year at Stanford University. While there he completed the study entitled "Comparative Holding Power of Junior Colleges and Regular Four-year Colleges." This study was previously printed in the *Phi Delta Kappan* for October, 1930.

Under the terms of the Fellowship grant the recipient of the Fellowship agrees to furnish for publication in the BULLETIN of the Association, if desired, an abstract of the thesis submitted for his degree. While this study is not his degree thesis, it is the result of work completed at Stanford University during the year that he held our Fellowship.

Mrs. Annie Clark, wife of Theron Clark, Registrar of the University of Southern California, recently passed away at her home in Los Angeles, California. Mrs. Clark suffered a cerebral hemorrhage following a nervous breakdown. Mr. Clark was formerly the Registrar of Bucknell University at Lewisburg, Pennsylvania.

The University of Wyoming was host to the Colorado-Wyoming Registrars Association on October 14, 1930. The officers elected for the coming year are: President, Miss Lucy Spicer, of Western State College at Gunnison, Colorado; Secretary-Treasurer, Mrs. Mary Wilkerson, of the School of Mines at Golden, Colorado. Mr. R. E. Mc-

Whinnie is the retiring president and Mrs. Josephine Morrow, of Colorado College, is the retiring secretary-treasurer. The program was as follows:

Round Table discussions: Interpreting extension work credit, led by Mrs. Virginia Sears, of Colorado Teachers College.

Establishing credit by examination: Credit for skill subjects, led by Miss Lucy Spicer, of Western State College.

Permanent Records—cards, loose leaves, etc., led by Sister Mary Vivian, of the Loretto Heights College.

Problems of personnel, led by Mr. Fred E. Aden, of the University of Colorado.

Mr. E. H. Homan has severed his connection with Temple University of Philadelphia, Pennsylvania. Miss Esther B. Nichols, for the time being, is Acting Registrar of that institution.

Purdue University published, under date of October, 1930, in its "Studies in Higher Education XV," a pamphlet entitled "Distinguished Students—What They Are and Why," by H. H. Remmers, Ph.D. The bulletin is a scholarly dissertation on a subject of vital importance to all colleges but limitations of space make it impossible to print more than a portion of the summary.

"A student's chances for appearing on the list of distinguished students (at Purdue University) are enhanced in varying amounts if the following facts can be affirmed of him:

"1. Having a high standing on entrance tests.
"2. Being in the Schools of Agriculture, Chemical Engineering, or Science.
"3. Being a junior or senior rather than a freshman or sophomore.
"4. Being younger than the modal age at entrance.
"5. Being slightly heavier than average.
"6. Being less interested in sports than the average student.

"7. Having a self-rating above average on the trait *native capacity.*
"8. Being rated above average on the Purdue Personnel Rating Scale.
"9. Being an only child or one of two children in the family.
"10. Coming from a large, long-term city high school.
"11. Having a father who is a professional man.
"12. Having few relatives graduating from Purdue University.

"It should of course be borne in mind that the conclusions arrived at in this study apply in logical strictness only to Purdue University. It is entirely possible that in other institutions certain of these variables might be found to be neutral or even related to scholastic success in a manner opposite to that obtained here. It is my belief, however, that by and large they are of general import for institutions of the type represented by Purdue University."

Mr. A. F. Scribner, Registrar of Valparaiso University, has obtained a leave of absence from that institution for a period of seven months. He plans to spend this time as a student at the University of Kentucky taking work for his Master's degree in the field of administration under Mr. Ezra Gillis.

Hansford L. Simmons is serving as registrar of the Mississippi State College for Women, Columbus, Mississippi, the oldest state-owned institution for women in America. Mr. Simmons is also vice-president of the college. He was, for a number of years, superintendent of leading county agricultural high schools in the state. He succeeds as registrar Mrs. Bessie K. Daugherty, who enters the business field at Tupelo, Mississippi.

One doesn't read many pages of Max McConn's uproarious "Studies Aren't Everything"* without being convinced that the author could gain his obvious knowledge of the intimacies and intricacies of college life only by being either an active participant or a kibitzer or eavesdropper. The knowledge that this Max McCoon is C. M. McConn, long the registrar at the University of Illinois and for several years past the dean at Lehigh University, helps somewhat in solving the mystery as to where he got his ammunition.

This is a diary of a freshman, somewhat in the Plupy Shute style, who lasted at Higgins College from September to the Christmas vacation, at which time, having acquired a world of campus training, a fraternity pin, a class presidency, several black eyes and injured morals, not to mention a prospective wife, he went back home at the dean's request to continue selling lots in his father's successful real estate ventures. He learns a lot—but not from books, for "studies aren't everything."

The story is told in a kaleidoscopic panorama of fast-moving events, snappy comments and sly digs. The author never stops to explain or diagram his jokes or to expound the reasons and philosophy which underlie his plot. He has filled his smallish book with a full complement of characters to be found in their habitat near and on a college campus, not omitting registrars, deans, and prexies, and they all come in for their share of the hilarious razzing.

It is the kind of a clever book about which every dean and registrar might exclaim: "I wish I had thought of doing that. Why didn't I?" To which the answer is, McConn thought of it and did it.

A. R. WARNOCK,
Dean of Men, The Pennsylvania State College.

* The Viking Press. $2.00.